

### **REMARKS**

Favorable reconsideration and allowance of the present application are respectfully requested in view of the foregoing amendments and the following remarks.

Currently, claims 27-38, 50-51, 53-54, and 56-81, including independent claims 27 and 35, are pending in the present application. Independent claim 27, for instance, is directed to a wiper comprising a nonwoven fabric and a sanitizing formulation applied thereto in an amount from about 150% to about 600% of the dry weight of the wiper. The sanitizing formulation comprises water and a surfactant component that consists essentially of one or more nonionic surfactants. The sanitizing formulation further comprises 0.01% by weight to about 0.4% by weight of at least one benzalkonium halide. The sanitizing formulation is also configured so that the formulation is released from the nonwoven fabric as a solution during use of the wiper in food service applications. The benzalkonium halide is present within the released solution in an amount less than about 2000 parts per million of the released solution. Further, the wiper exhibits a log reduction for *E. Coli*, *S. Aureus*, or both of at least about 3 and a Kill Efficiency Ratio for *E. Coli*, *S. Aureus*, or both of at least about 100.

In the Office Action, independent claims 27 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Pub. No. 2002/0103098 to Harrison, et al. Harrison, et al. is directed to an aqueous cleaning composition useful in removing dirt and grime from surfaces, such as glazed ceramic tiles, polished metals, enameled metal surfaces, and glazed porcelain. [0002]. As noted at paragraphs [0005] – [0009], the aqueous cleaning composition of Harrison, et al. contains the following constituents: (A) quaternary ammonium surfactant compound

having germicidal properties; (B) surfactant system which includes at least one amine oxide surfactant, and at least one further surfactant selected from carboxylates and N-acyl amino acid surfactants, especially sarcosinates; (C) solvent system containing an alkylene glycol ether solvent further with a C<sub>1</sub>-C<sub>6</sub> alcohol, especially where the C<sub>1</sub>-C<sub>6</sub> alcohol is isopropanol; (D) alkalizing agent such as an alkanolamide, especially an alkylamine; and (E) water. Harrison, et al. primarily focuses on providing its cleaning/disinfecting composition as a ready to use product in a manually operated spray dispensing container so that its composition is ideally suited for use in a consumer "spray and wipe" application. See [0054], [0089], and Examples 1-4. Only at paragraphs [0091]-[0094] does Harrison, et al. even cursorily introduce the concept of absorbing its cleaning/disinfecting composition onto a wipe to form a saturated wipe for use on an "as-needed" basis.

However, as outlined in detail in Applicants' previous response, independent claims 27 and 35 require that the benzalkonium halide is present *within a released solution* in an amount less than about 2000 parts per million of the released solution, while at the same time attaining a high log reduction for *E. coli*, *S. Aureus*, or both. *Nowhere* does Harrison, et al. recognize that it may be beneficial to know the *contents* of the solution the wiper is releasing—more particularly, to *know, and to control*, the benzalkonium halide content within that released solution. Furthermore, Harrison, et al. also requires the use of a carboxylate or N-acyl amino acid surfactant, which are "anionic" surfactants specifically excluded from independent claims 27 and 35. (See e.g., Appl., pp. 22-23).

While Applicants continue to assert that the above-mentioned aspects of independent claims 25 and 37 are not taught by Harrison, et al., such claims have nevertheless been amended to further differentiate them from the cited reference. That is, claims 25 and 37 both require that the wiper exhibit a "Kill Efficiency Ratio" ("KER") of at least about 40. KER is defined as the number of bacteria killed divided by the amount of antimicrobial agent (ppm) added to the sanitizing formulation. (Appl. p. 33). This ratio may vary greatly based on the selected combination of features (e.g., the ingredients of the sanitizing formulation, relative amounts, add-on levels, wiper materials, etc.). To best illustrate this point, reference may be made to the Examples set forth in the present application. More specifically, listed below in Table 1 are the KER values for Formulations 30-37 of Example 2 of the present application:

**Table 1: Properties & KER Values (*S. Aureus*) for Formulations 30-37:**

| Component             | 30         | 31         | 32         | 33         | 34         | 35         | 36         | 37         |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Benzalkonium chloride | 981 ppm    | 763 ppm    | 601 ppm    | 415 ppm    | 1946 ppm   | 1993 ppm   | 1997 ppm   | 1981 ppm   |
| EDTA                  | 1.00 wt. % | 1.00 wt. % | 1.00 wt. % | 1.00 wt. % | 0.45 wt. % | -          | 0.15 wt. % | 0.15 wt. % |
| Nonionic Surfactant   | 0.05 wt. % | 0.10 wt. % | 0.20 wt. % | 0.50 wt. % | -          | -          | -          | -          |
| Ethanol               | -          | -          | -          | -          | 10.0 wt. % | 10.0 wt. % | 10.0 wt. % | 10.0 wt. % |
| Methyl paraben        | -          | -          | -          | -          | 0.10 wt. % | 0.10 wt. % | 0.10 wt. % | 0.10 wt. % |
| Propyl paraben        | -          | -          | -          | -          | 0.04 wt. % | 0.04 wt. % | 0.04 wt. % | 0.04 wt. % |
| Sodium meta silicate  | -          | -          | -          | -          | -          | 1.50 wt. % | 0.90 wt. % | -          |
| Water                 | q.s.       | q.s.       | q.s.       | q.s.       | q.s.       | q.s.       | q.s.       | q.s.       |
| pH                    | 11.4       | 11.4       | 11.4       | 11.4       | 9.1        | 9.1        | 9.2        | 9.1        |
| <b>KER</b>            | <b>102</b> | <b>131</b> | <b>166</b> | <b>241</b> | <b>3</b>   | <b>3</b>   | <b>3</b>   | <b>3</b>   |

As indicated, variations in the components and concentrations of the sanitizing formulation may result in substantial changes in the KER values for *S. Aureus*. For instance, Formulations 34-37, which lacked a nonionic surfactant, had KER values of only 3. To the contrary, Formulations 30-33 had KER values from 102 to 241. Moreover, variations in the concentration of the benzalkonium halide and nonionic surfactant resulted in substantial changes in the KER values for the Formulations 30-33. Notably, such high KER values were achieved for released solutions containing a relatively low amount of the benzalkonium halide (e.g., from 380 to 418 ppm for Formulations 30-33).

Harrison, et al. simply fails to disclose or suggest a wiper that meets all of the limitations of independent claims 25 and 37, including the required Kill Efficiency Ratio. To the contrary, Harrison, et al. provides only enough information to tell one of ordinary skill in the art (1) that Harrison, et al.'s cleaning compositions "can also be applied to a hard surface by using a wet wipe," and (2) that the compositions can be "absorbed onto the wipe to form a saturated wipe." *Nowhere* does Harrison, et al. recognize that it may be beneficial to know the *contents* of the solution the wiper is releasing—more particularly, to *know, and to balance*, the benzalkonium halide content and the resulting antimicrobial efficacy. More specifically, through optimization of antimicrobial efficacy, smaller concentrations of antimicrobial agent may be utilized, which in turn leads to a higher Kill Efficiency Ratio. This is especially important in food service applications where it is desired to minimize the likelihood that the antimicrobial agent will become present in large amounts in food that later contacts the wiped surface. (Appl., pp. 12-13).

Applicants emphasize that the claimed invention must be considered as a whole in conducting an analysis under 35 U.S.C. § 103. In the present case, Harrison, et al. fails to disclose multiple aspects of Applicants' independent claims. When properly considered as a whole and in conjunction with the other limitations of the present claims, there is simply no motivation to modify Harrison, et al. in an attempt to render obvious independent claims 27 and 35. Thus, for at least the reasons set forth above, Applicants respectfully submit that independent claims 27 and 35 patentably define over Harrison, et al.

The dependent claims were also rejected under one or both of the above-discussed references. Applicants respectfully submit that at least for the reasons indicated above relating to independent claims 27 and 35, dependent claims 28-34, 36-38, 49-51, and 53-54 patentably define over the reference(s) cited. However, Applicants also note that the patentability of dependent claims 28-34, 36-38, 49-51, and 53-54 does not necessarily hinge on the patentability of independent claims 27 and 35. In particular, some or all of the dependent claims are believed to possess features that are independently patentable, regardless of the patentability of claims 27 and 35.

As such, for at least the reasons set forth above, Applicants respectfully submit that the present claims patentably define over all of the prior art of record. It is believed that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. Examiner Boyd is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this Amendment.


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Please charge any additional fees required by this Amendment to Deposit

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Respectfully submitted,

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